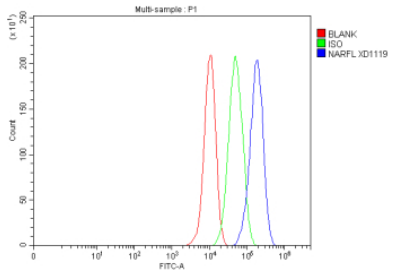
CIAO3 Antibody / Cytosolic iron-sulfur assembly component 3 (FY12486)

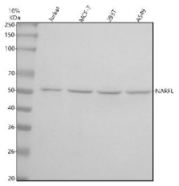
Catalog No.	Formulation	Size
FY12486	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q9H6Q4
Applications	Western Blot: 0.25-0.5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This CIAO3 antibody is available for research use only.



Flow Cytometry analysis of MCF-7 cells using anti-CIAO3 antibody. Overlay histogram showing MCF-7 cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-CIAO3 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Western blot analysis of CIAO3 using anti-CIAO3 antibody. Lane 1: human Jurkat whole cell lysates, Lane 2: human MCF-7 whole cell lysates, Lane 3: human 293T whole cell lysates, Lane 4: human whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-CIAO3 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. The expected molecular weight of CIAO3 is ~53 kDa.

Description

CIAO3 antibody recognizes Cytosolic iron-sulfur assembly component 3, a core factor involved in the maturation of cytosolic and nuclear iron-sulfur (Fe-S) proteins. CIAO3 functions as part of the cytosolic iron-sulfur protein assembly (CIA) complex, which transfers Fe-S clusters from scaffold proteins to target apoproteins essential for DNA replication, RNA processing, and metabolic reactions. The CIAO3 antibody is commonly used to investigate cellular iron homeostasis, redox biology, and cofactor assembly pathways crucial for enzymatic function.

CIAO3 is encoded by the CIAO3 gene located on human chromosome 14q32.31. The protein is approximately 28 kilodaltons in size and belongs to the NUBP (nucleotide-binding protein) family of P-loop NTPases. It interacts with other CIA machinery components, including MMS19, CIAO1, and FAM96B (CIAO2B), forming a functional complex responsible for Fe-S cluster transfer to client proteins. CIAO3 contains conserved Walker A and Walker B motifs, enabling nucleotide binding and hydrolysis that regulate its conformational dynamics during cofactor delivery.

The CIAO3 antibody detects a 53 kilodalton band by western blot.rafficking. Functional studies show that depletion of CIAO3 results in defective maturation of cytosolic aconitase, DNA polymerases, and helicases, leading to impaired DNA replication and increased oxidative stress sensitivity. CIAO3-deficient cells exhibit reduced activity of Fe-S-dependent enzymes and compromised genome integrity.

CIAO3 also participates in iron homeostasis and redox regulation by influencing intracellular iron distribution. Disruption of the CIA machinery contributes to mitochondrial dysfunction, neurodegeneration, and metabolic disorders. Given its conserved function across species, CIAO3 serves as a model for understanding Fe-S protein biogenesis in eukaryotes. NSJ Bioreagents offers a validated CIAO3 antibody optimized for western blot, immunoprecipitation, and cell imaging, providing researchers with a reliable tool to investigate iron-sulfur cluster assembly, DNA metabolism, and oxidative stress response pathways.

Application Notes

Optimal dilution of the CIAO3 antibody should be determined by the researcher.

Immunogen

E.coli-derived human NARFL/CIAO3 recombinant protein (Position: Y196-W476) was used as the immunogen for the CIAO3 antibody.

Storage

After reconstitution, the CIAO3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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